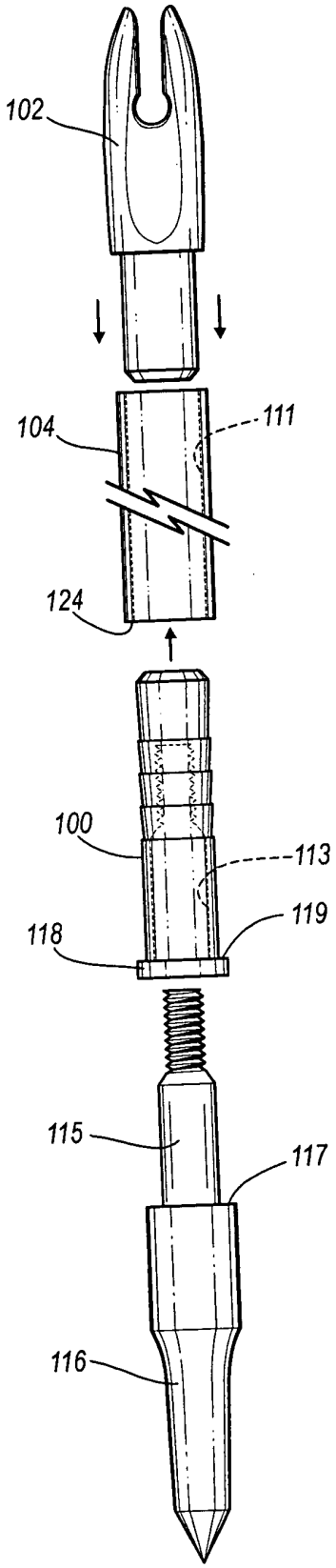


Fig. 1
(Prior Art)

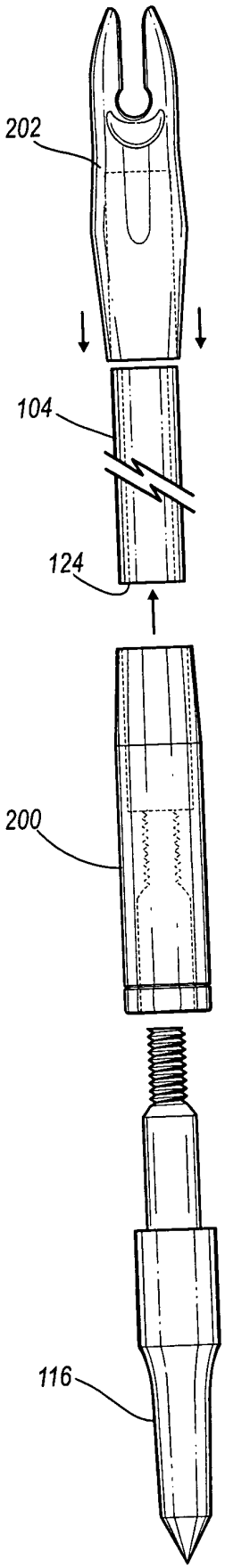


Fig. 2
(Prior Art)

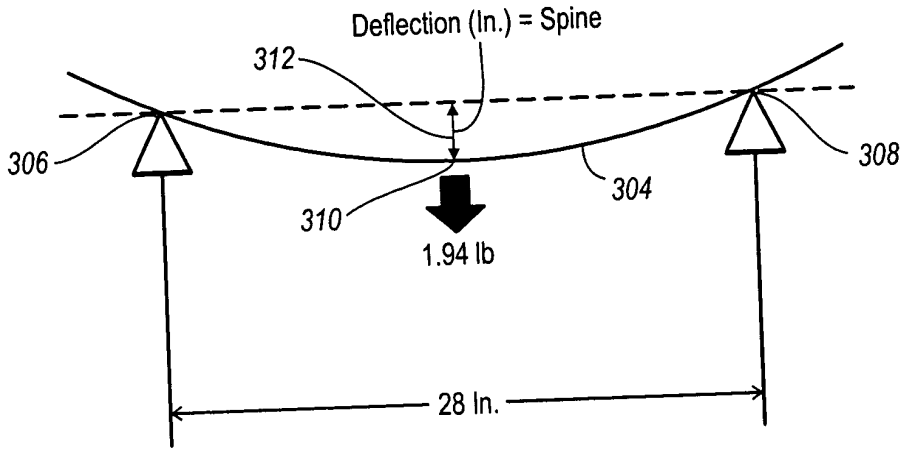


Fig. 3
(Prior Art)

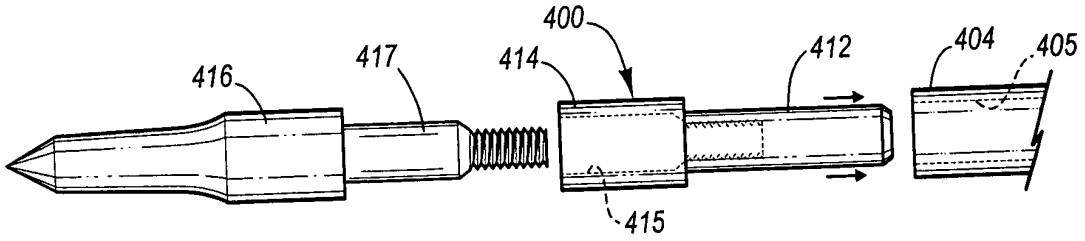


Fig. 4A
(Prior Art)

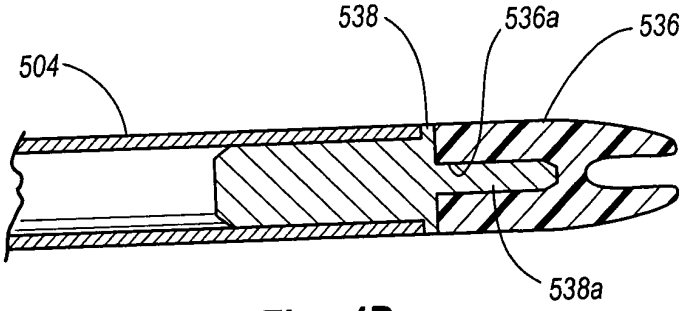
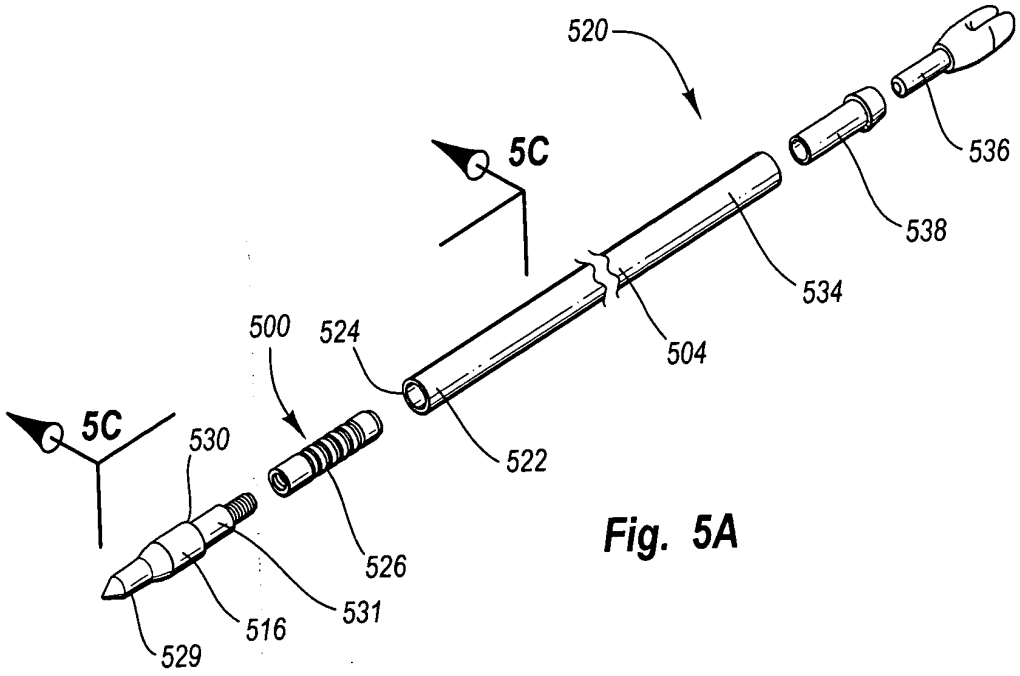


Fig. 4B
(Prior Art)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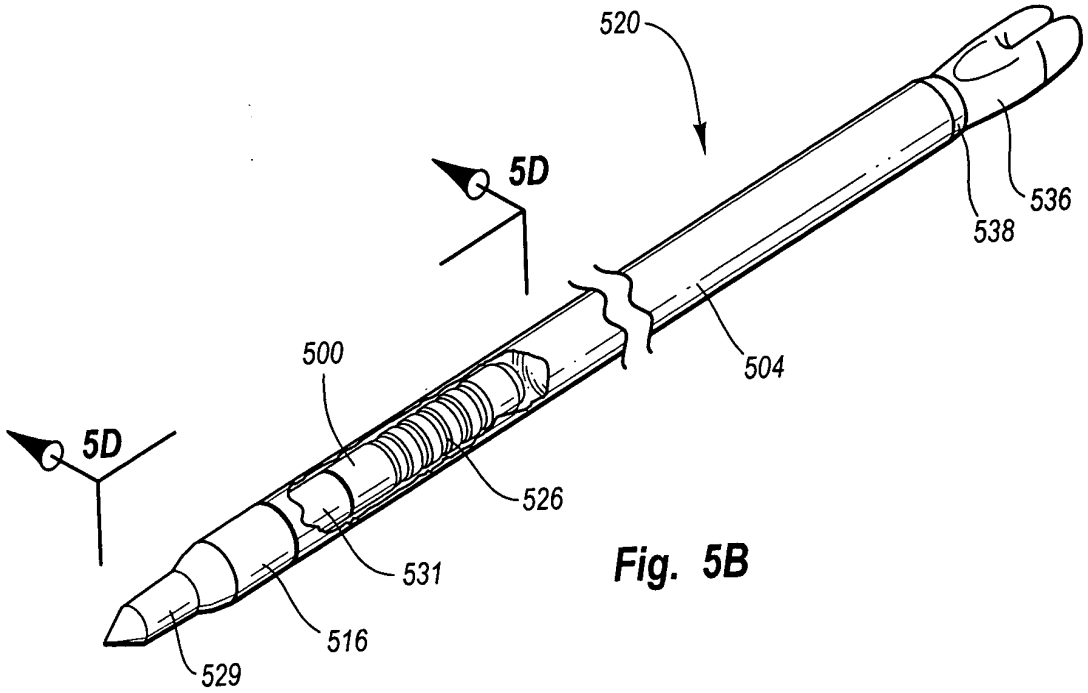
5C
536
538
534
504
500
524
522
5C
530
526
531
516
529

Fig. 5A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5D
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538
504
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526
5D
531
516
529

Fig. 5B

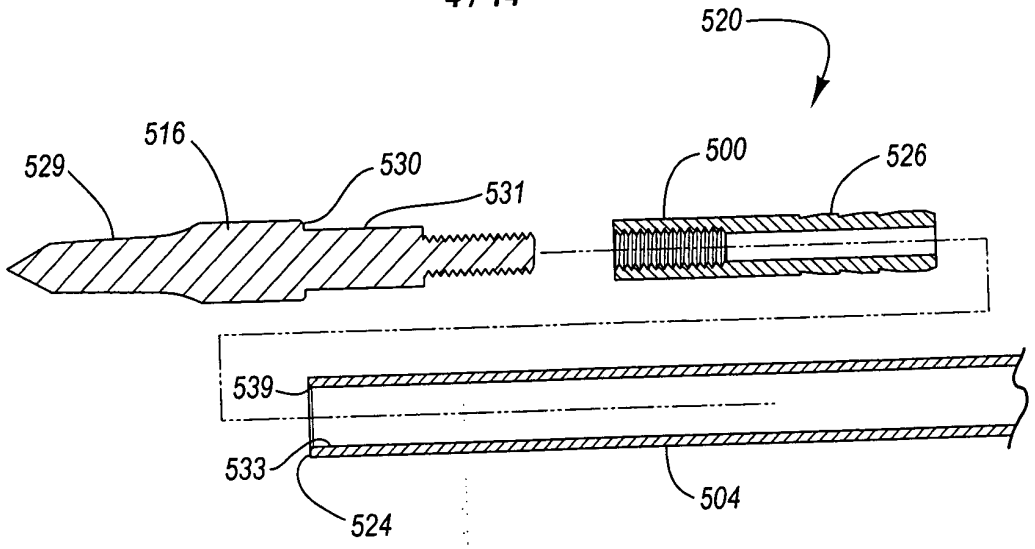


Fig. 5C

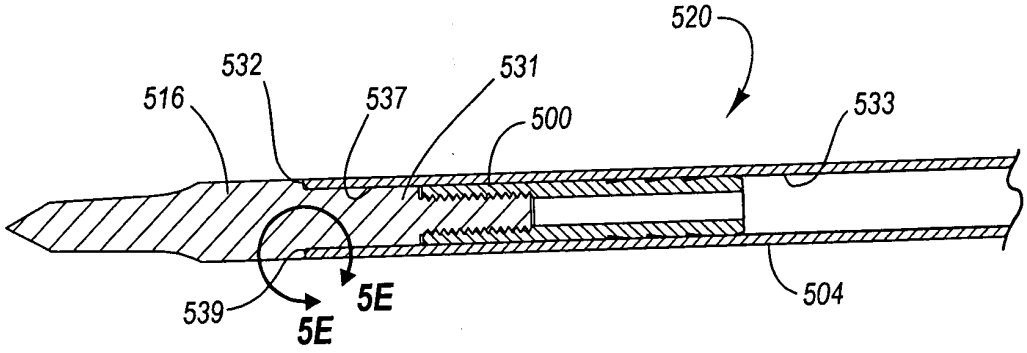


Fig. 5D

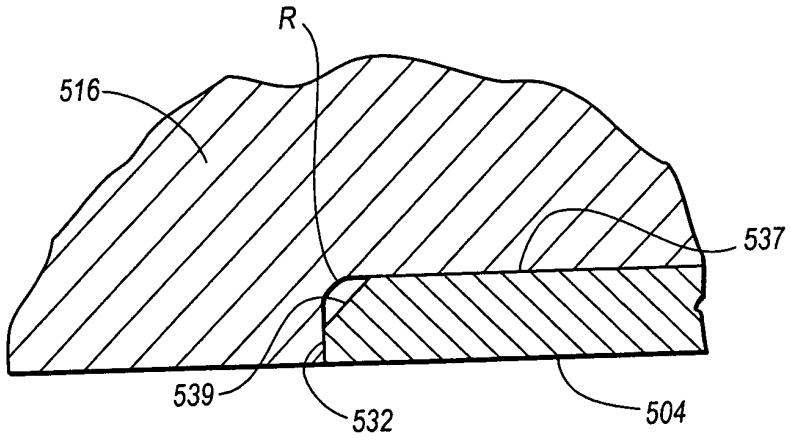


Fig. 5E

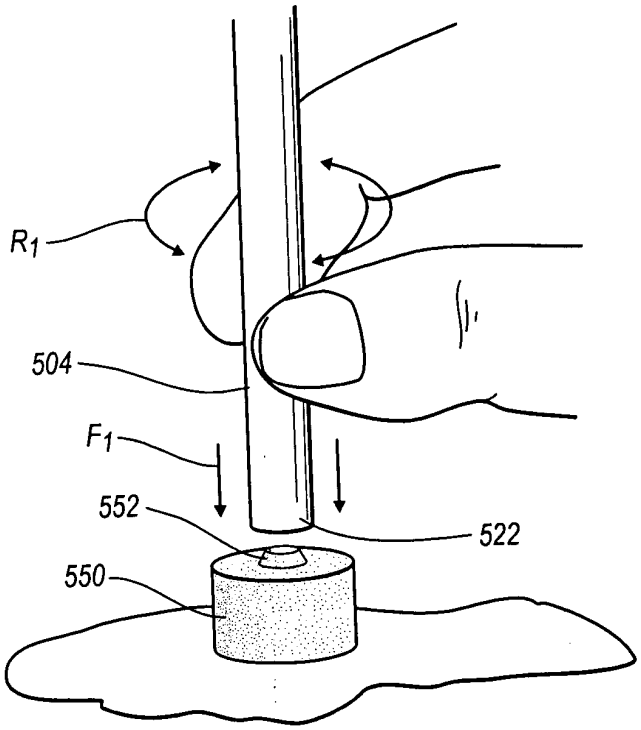


Fig. 5F

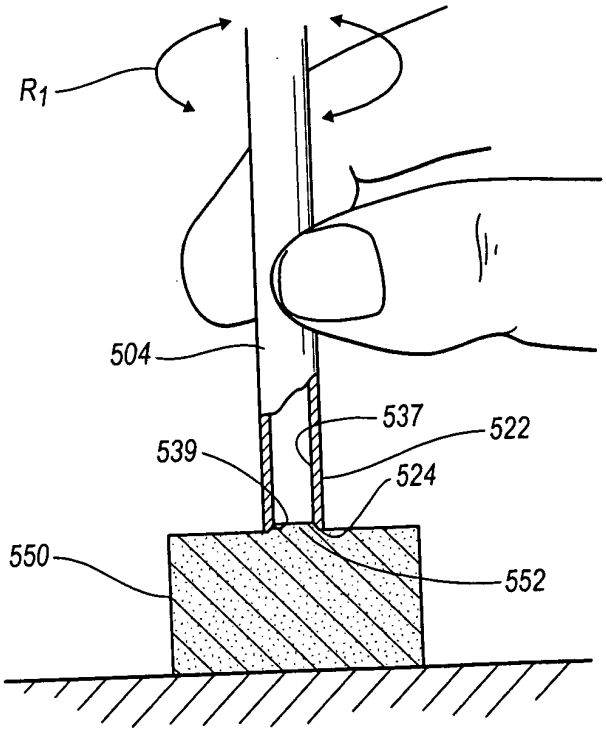
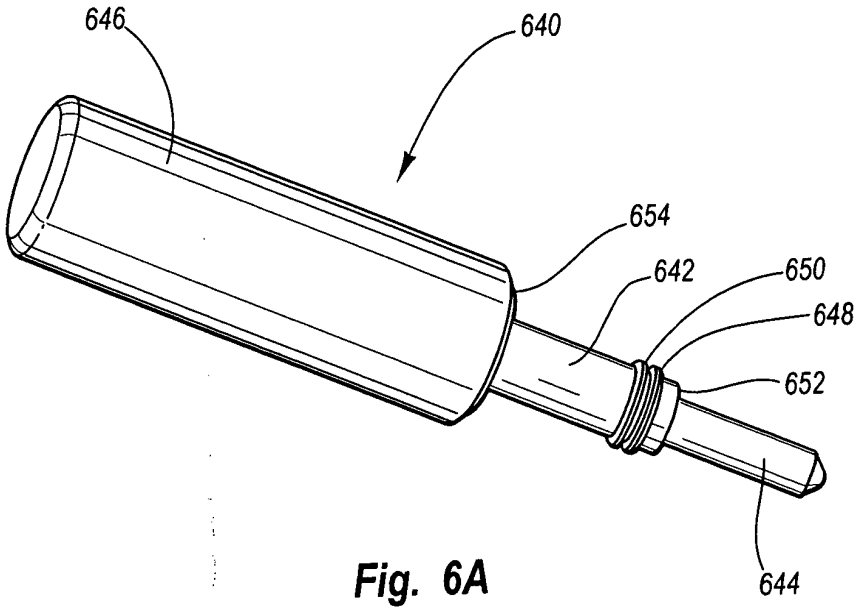


Fig. 5G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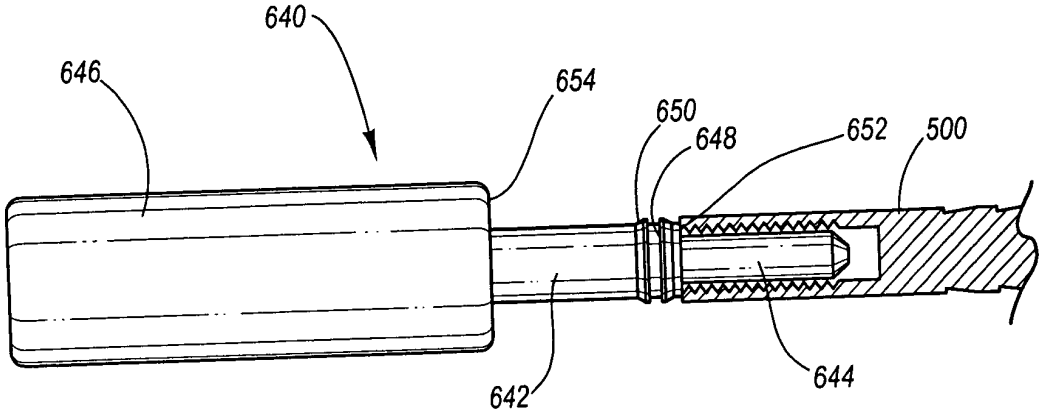
648
652
644

Fig. 6A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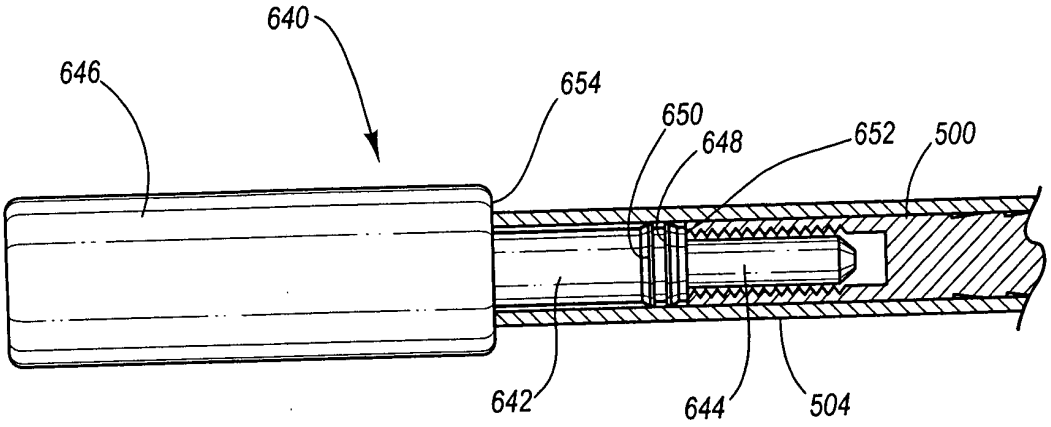
642
644

Fig. 6B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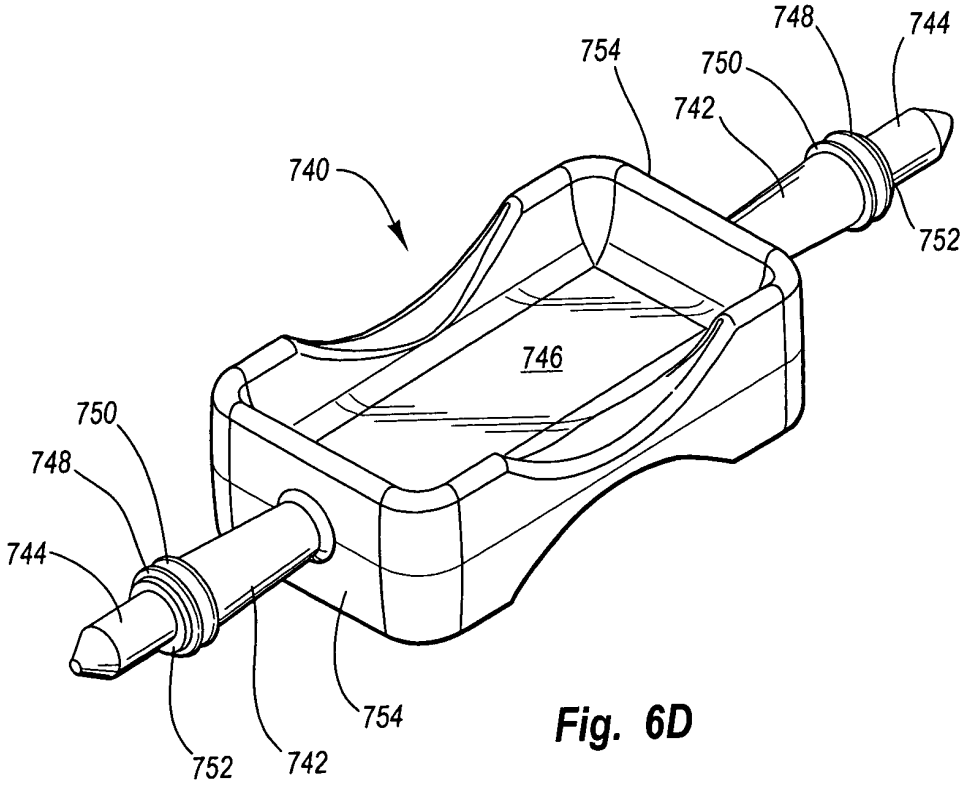
654
650
648
652
500
642
644
504

Fig. 6C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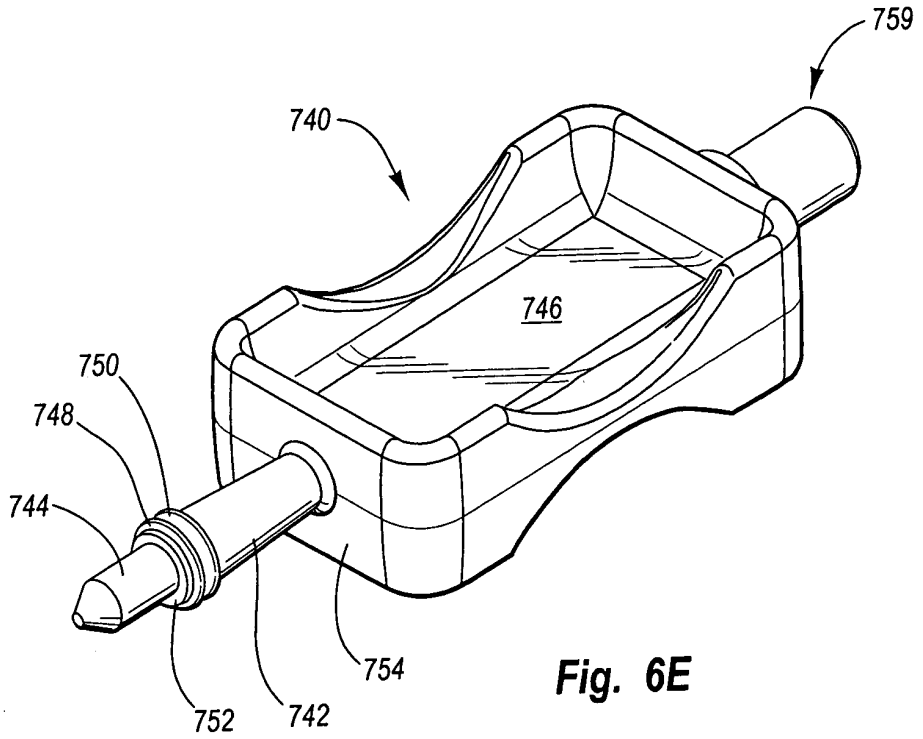
752
746
750
748
744
754
752
742

Fig. 6D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744
754
752
742

Fig. 6E

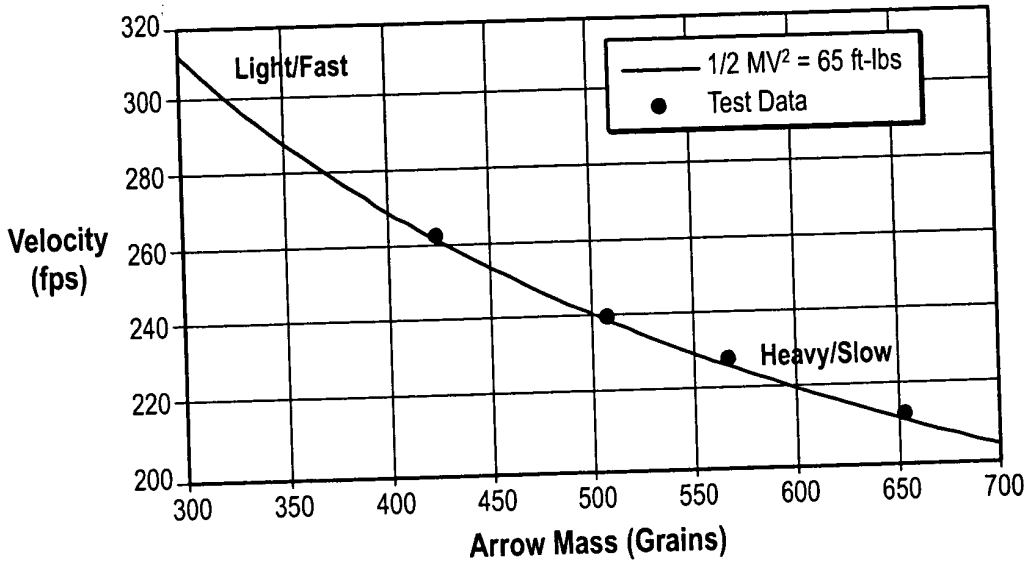
320
300
280
260
240
220
200
Velocity (fps)
Light/Fast
1/2 MV² = 65 ft-lbs
Test Data
Heavy/Slow
300
350
400
450
500
550
600
650
700
Arrow Mass (Grains)

Fig. 7

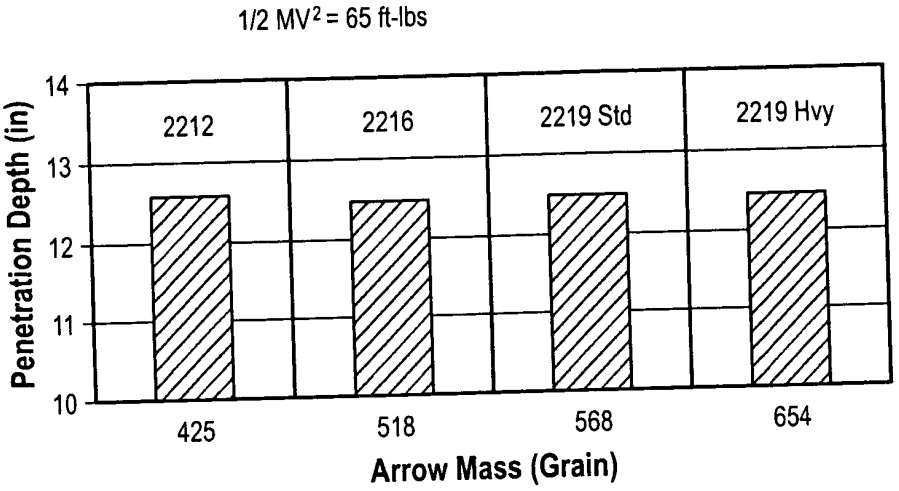
1/2 MV² = 65 ft-lbs
Penetration Depth (in)
14
13
12
11
10
2212
2216
2219 Std
2219 Hvy
425
518
568
654
Arrow Mass (Grain)

Fig. 8

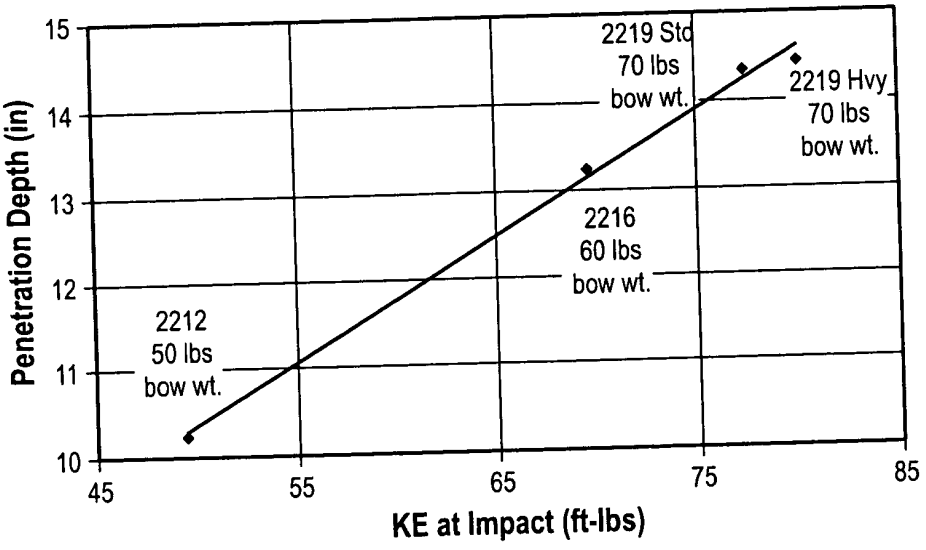
Penetration Depth (in)
15
14
13
12
11
10
45
55
65
75
85
KE at Impact (ft-lbs)
2219 Std
70 lbs
bow wt.
2219 Hvy
70 lbs
bow wt.
2216
60 lbs
bow wt.
2212
50 lbs
bow wt.

Fig. 9

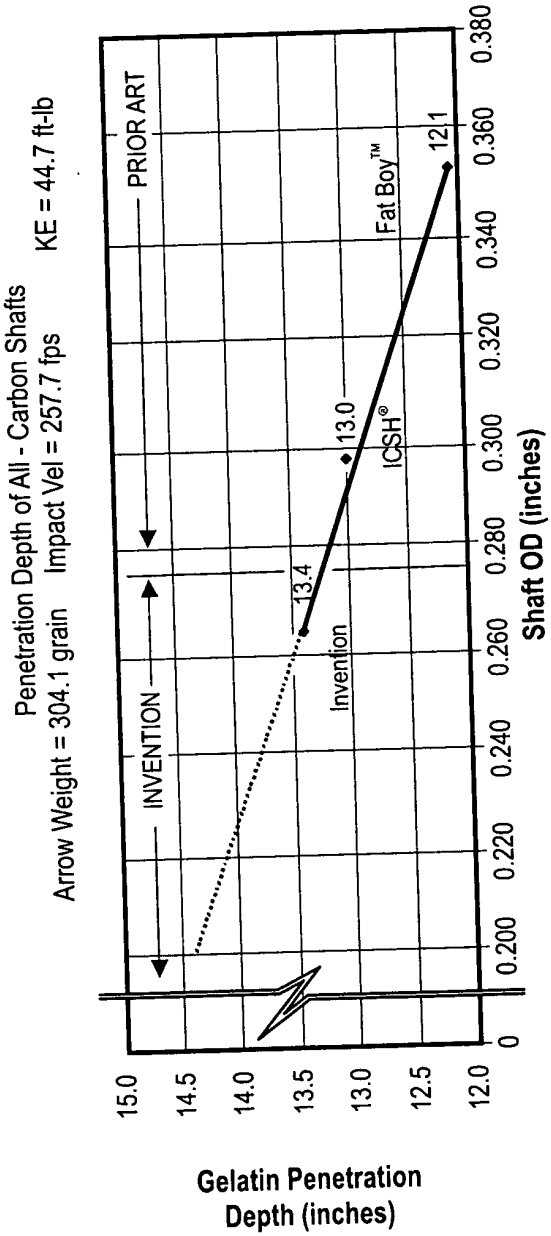
Penetration Depth of All - Carbon Shafts
Arrow Weight = 304.1 grain Impact Vel = 257.7 fps KE = 44.7 ft-lb
PRIOR ART
INVENTION
Fat Boy™
ICSH®
Invention
13.4
13.0
12.1
Shaft OD (inches)
0.380
0.360
0.340
0.320
0.300
0.280
0.260
0.240
0.220
0.200
0
15.0
14.5
14.0
13.5
13.0
12.5
12.0
Gelatin Penetration Depth (inches)

Fig. 10

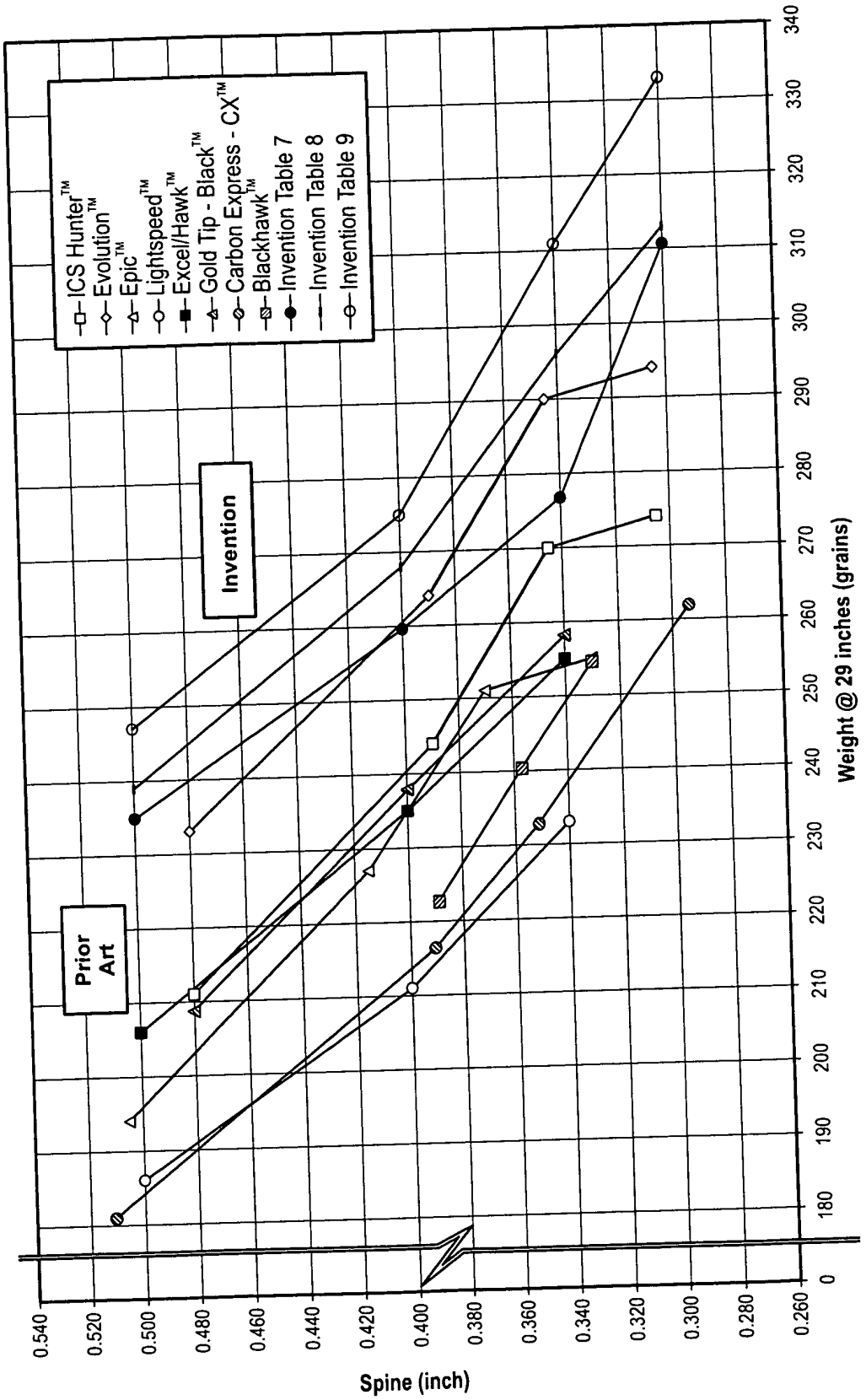
ICS Hunter™
Evolution™
Epic™
Lightspeed™
Excel/Hawk™
Gold Tip - Black™
Carbon Express - CX™
Blackhawk™
Invention Table 7
Invention Table 8
Invention Table 9
Invention
Prior Art
Spine (inch)
0.540
0.520
0.500
0.480
0.460
0.440
0.420
0.400
0.380
0.360
0.340
0.320
0.300
0.280
0.260
Weight @ 29 inches (grains)
0
180
190
200
210
220
230
240
250
260
270
280
290
300
310
320
330
340

Fig. 11

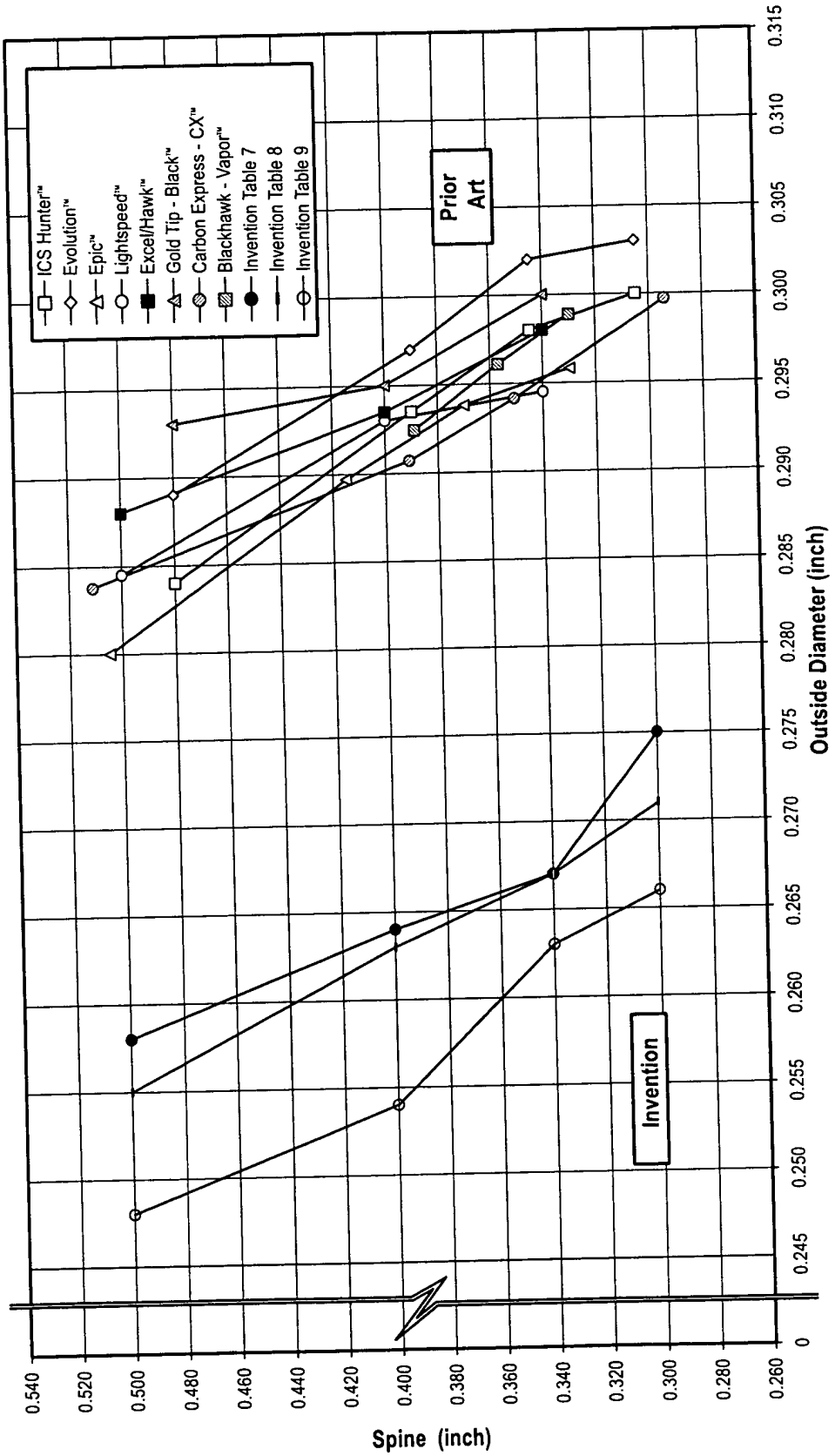
ICS Hunter™
Evolution™
Epic™
Lightspeed™
Excel/Hawk™
Gold Tip - Black™
Carbon Express - CX™
Blackhawk - Vapor™
Invention Table 7
Invention Table 8
Invention Table 9
Prior Art
Invention
Outside Diameter (inch)
0.315
0.310
0.305
0.300
0.295
0.290
0.285
0.280
0.275
0.270
0.265
0.260
0.255
0.250
0.245
0
Spine (inch)
0.540
0.520
0.500
0.480
0.460
0.440
0.420
0.400
0.380
0.360
0.340
0.320
0.300
0.280
0.260

Fig. 12

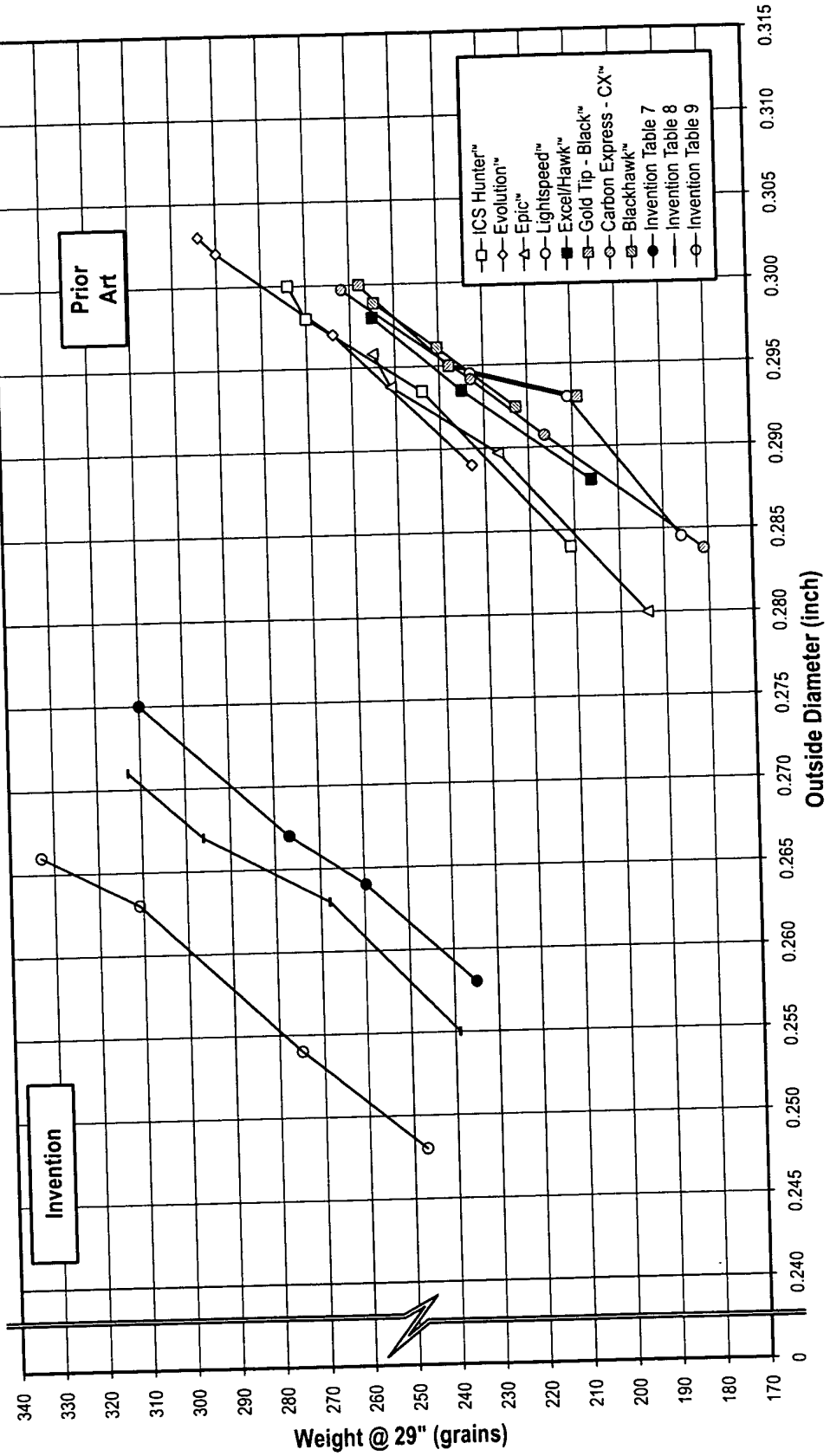
Prior Art
Invention
ICS Hunter™
Evolution™
Epic™
Lightspeed™
Excel/Hawk™
Gold Tip - Black™
Carbon Express - CX™
Blackhawk™
Invention Table 7
Invention Table 8
Invention Table 9
Outside Diameter (inch)
0
0.240
0.245
0.250
0.255
0.260
0.265
0.270
0.275
0.280
0.285
0.290
0.295
0.300
0.305
0.310
0.315
Weight @ 29" (grains)
340
330
320
310
300
290
280
270
260
250
240
230
220
210
200
190
180
170

Fig. 13

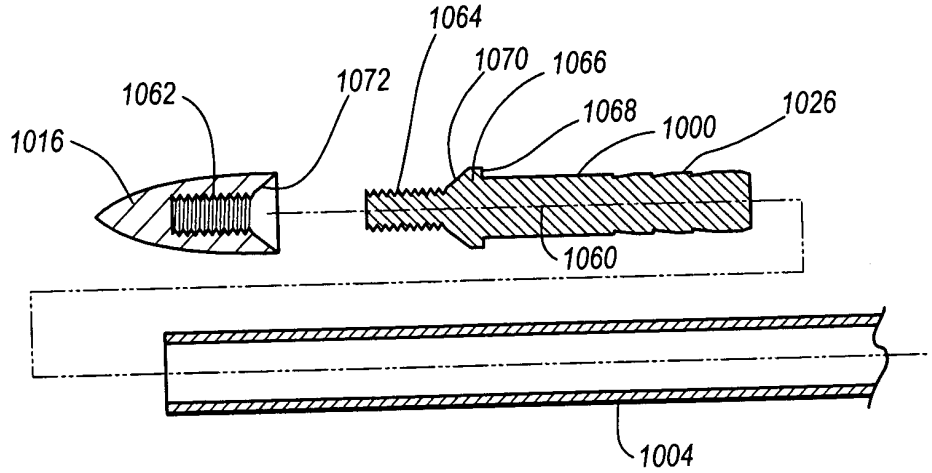

Fig. 14A

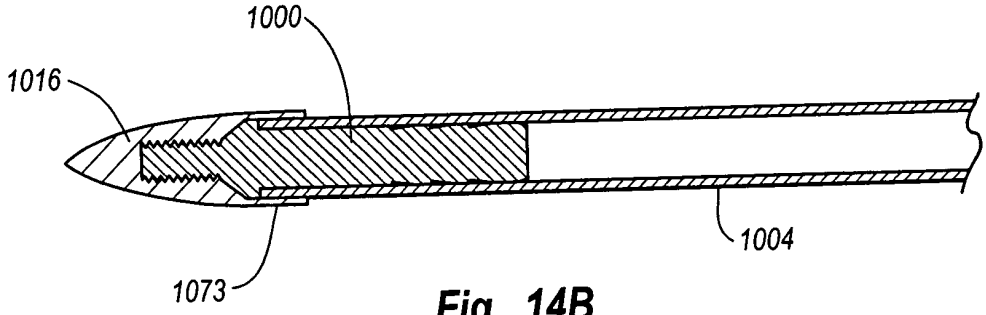

Fig. 14B

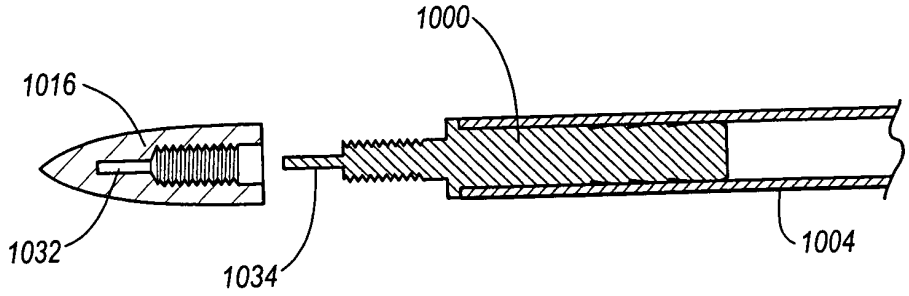

Fig. 14C